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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**FILE COPY**

Applicants: Philip Stashenko and Yi-Ping Li  
Application No.: 09/618,304 Group Art Unit: 1651  
Filed: July 18, 2000 Examiner: Not Assigned  
Title: OSTEOCLAST PROTON PUMP SUBUNIT

CERTIFICATE OF MAILING	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231	
on <u>5/2/01</u>	<u>Stephanie L. Carta</u>
Date	Signature
<u>Stephanie L. Carta</u>	
Typed or printed name of person signing certificate	

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

This Information Disclosure Statement is submitted:

- ☐ under 37 CFR 1.129(a), or  
(First/Second submission after Final Rejection)
- ☒ under 37 CFR 1.97(b), or  
(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).
- ☐ under 37 CFR 1.97(c) together with either:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, or
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with:
- ☐ a Statement under 37 CFR 1.97(e), as checked below, and
- ☐ a \$180.00 fee under 37 CFR 1.17(p), or  
(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)
- ☐ under 37 CFR 1.97(i):  
Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.  
(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
- ☒ Copies of the cited references, AL and AR-AT2, are enclosed.
- ☐ Copies of cited references are not enclosed since they were entered in prior application, U.S. Application No. [ ] to which priority under 35 U.S.C. 120 is claimed. [The earlier application contains copies of the cited references.]
- ☐ Some of the references were cited in the enclosed International Search Report in a counterpart foreign application.

## Concise Explanation Requirement (non-English references):

- ☐ The "concise explanation" requirement for reference(s) [ ] under 37 CFR 1.98(a)(3) is satisfied by:
- ☐ the explanation provided on the attached sheet.
- ☐ the explanation provided in the Specification.
- ☐ submission of the enclosed International Search Report.
- ☐ the enclosed English language abstract.

- ☐ Applicant requests that the following pending applications be considered:

Examiner's  
Initials

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_ U.S. Patent Application No. [ ], Publication No. [ ], Publication Date [ ],  
by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_\_  
Examiner\_\_\_\_\_  
Date

☐ A copy of each above-cited application, including the current claims, is enclosed

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

It is requested that the information disclosed herein be made of record in this application.

Method of payment:

- ☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.
- ☐ Please charge Deposit Account 08-0380 in the amount of \$[       ]. A copy of this Statement is enclosed.
- ☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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Dated: May 2, 2001

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

April 18, 2001

(Use several sheets if necessary)

APPLICANT

Philip Stashenko, et al.

FILING DATE

July 18, 2000

GROUP

1651

## U.S. PATENT DOCUMENTS

EXAM- INER INI- TIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
AL	WO94/23033	13 Oct 1994	PCT			

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AR	Li, Y-P. et al., "Molecular Cloning and Characterization of a Putative Novel Human Osteoclast-Specific 116-kDa Vacuolar Proton Pump Subunit", <i>Biochemical and Biophysical Research Communications</i> , 218:813-821 (1996).
AS	Shapiro, L.H. et al., "Carbonic Anhydrase II is Induced in HL-60 Cells by 1,25-Dihydroxyvitamin D <sub>3</sub> : a Model for Osteoclast Gene Regulation", <i>FEBS Letters</i> , 249(2):307-310 (1989).
AT	Ketcham, C.M. et al., "Molecular Cloning of the Type 5, Iron-Containing, Tartrate-Resistant Acid Phosphatase from Human Placenta", <i>The Journal of Biological Chemistry</i> , 264(1):557-563(1989).
AU	Wilhelm, S.M. et al., "SV40-Transformed Human Lung Fibroblasts Secrete a 92-kDa Type IV Collagenase Which Is Identical to That Secreted by Normal Human Macrophages", <i>The Journal of Biological Chemistry</i> , 264(29):17213-17221 (1989).
AV	Ek-Rylander, B. et al., "Cloning, Sequence, and Developmental Expression of a Type 5, Tartrate-Resistant, Acid Phosphatase of Rat Bone", <i>The Journal of Biological Chemistry</i> , 266(36):24684-24689 (1991).
AW	Tezuka, K. et al., "Molecular Cloning of a Possible Cysteine Proteinase Predominantly Expressed in Osteoclasts", <i>The Journal of Biological Chemistry</i> , 269(2):1106-1109 (1994).
AX	Tezuka, K. et al., "Identification of Osteopontin in Isolated Rabbit Osteoclasts", <i>Biochemical and Biophysical Research Communications</i> , 186(2):911-917 (1992).
AY	Peng, S.-B. et al., "Alternative mRNA Splicing Generates Tissue-specific Isoforms of 116-kDa Polypeptide of Vacuolar Proton Pump," <i>J. of Biol Chem.</i> 269(25):17262-17266 (1994).

EXAMINER

DATE CONSIDERED

FORM PTO-1449  
(REV. 7-80)INFORMATION DISCLOSURE CITATION  
IN AN APPLICATIONApril 13, 2001  
(Use several sheets if necessary)

ATTY. DOCKET NO.

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APPLICANT

Philip Stashenko et al.

FILING DATE

July 18, 2000

GROUP

1651

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EXAM- INER INI- TIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AZ	Crider, B.P. et al., "Bafilomycin Inhibits Proton Flow Through the H <sup>+</sup> Channel of Vacuolar Proton Pumps," <i>J. of Biol. Chem.</i> 269(26): 17379-17381 (1994).
AR2	Perin, M.S. et al., "Structure of the 116-kDA Polypeptide of the Clathrin-coated Vesicle/Synaptic Vesicle Proton Pump," <i>J. of Biol. Chem.</i> 266(6):3877-3881 (1991).
AS2	Li, Y.-P. et al., "Atp6i-deficient Mice Exhibit Severe Osteoporosis Due to Loss of Osteoclast-mediated Extracellular Acidification," <i>Nat. Genet.</i> , 23:447-51 (1999).
AT2	Mattsson, J.P., et al., "Isolation and Reconstitution of a Vacuolar-type Proton Pump of Osteoclast Membranes", <i>J. Biol. Chem.</i> , 269(40):24979-24982 (1994).

EXAMINER

DATE CONSIDERED